

## Claims

- [c1] 1. A switch control circuit, applied to an auto laser power control circuit of a laser diode driving system, the switch control circuit being coupled to a driving circuit and a feedback amplifying circuit, the switch control circuit comprising:
- a first electronic switch, having a first terminal coupled to the feedback amplifying circuit, a second terminal and a control terminal;
  - a second electronic switch, having a first terminal coupled to a first power supply, a second terminal and a control terminal;
  - a third electronic switch, having a first terminal, a second terminal coupled to the driving circuit and a control terminal;
  - a fourth electronic switch, having a first terminal, a second terminal and a control terminal, wherein the second terminal of the first electronic switch, the second terminal of the second electronic switch, the first terminal of the third electronic switch and the first terminal of the fourth electronic switch are coupled together; and
  - a resistor, having a first terminal coupled to the second terminal of the fourth electronic switch and a second terminal coupled to the second terminal of the third electronic switch;
- wherein the control terminals of the first, second, third and fourth electronic switches receive a first control signal, and when the first control signal is enabled, the first and third electronic switches conduct and the second and fourth electronic switches are turned off, and when the first control signal is disabled, the first and third electronic switches are turned off and the second and fourth electronic switches conduct.
- [c2] 2. The switch control circuit according to claim 1, wherein the second electronic switch includes a first transistor, the third electronic switch includes a second transistor, and the first transistor and the second transistor are different types of transistor.
- [c3] 3. The switch control circuit according to claim 2, wherein the first transistor includes a PMOS transistor.
- [c4] 4. The switch control circuit according to claim 2, wherein the second transistor

includes an NMOS transistor.

[c5] 5. The switch control circuit according to claim 2, wherein the first electronic switch includes a first transmission gate, the fourth electronic switch includes a second transmission gate, and the first and second transmission gates receive a second control signal inverted to the first control signal.

[c6] 6. The switch control circuit according to claim 5, wherein when the first control signal is high, the first transmission gate and the second transistor conduct while the first transistor and the second transmission gate do not conduct, and when the first control signal is low, the first transistor and the second transmission gate conduct and the first transmission gate and the second transistor do not conduct.

[c7] 7. The switch control circuit according to claim 1, wherein the driving circuit is coupled to a second power supply, the first voltage is 3.3V, the second voltage is 5V, and the resistor is 1M $\Omega$ .

[c8] 8. A switch control circuit, applied in an auto laser power control circuit of a laser diode driver, the switch control circuit coupled to a driving circuit and a feedback amplifying circuit, switch control circuit comprising:  
a switch device, receiving a first control signal, the switch device coupled to a first power supply, the driving circuit and the feedback amplifying circuit;  
a damping, having a first terminal coupled to the switch device and a second terminal coupled to a coupling node between the driving circuit and the switch device;  
wherein the first control signal decided whether the first power supply is coupled to the damping and whether the feedback amplifying circuit is coupled to the driving circuit.

[c9] 9. The switch control circuit according to claim 8, wherein the switch device comprises:  
a first switch, coupled between the driving circuit and the feedback amplifying circuit, the conduction of the first switch being related to the first control signal;  
and

a second switch, coupled between the first power supply and the first terminal of the damping, the conduction of the second switch being related to the first control signal.

[c10]

10. The switch control circuit according to claim 8, wherein the switch device comprises:

a first electronic switch, having a first terminal coupled to the feedback amplifying circuit, a second terminal and a control terminal;

a second electronic switch, having a first terminal coupled to the first power supply, a second terminal and a control terminal;

a third electronic switch, having a first terminal, a second terminal coupled to the driving circuit and a control terminal; and

a fourth electronic switch, having a first terminal, a second terminal and a control terminal, wherein the second terminal of the first electronic switch, the second terminal of the second electronic switch, the first terminal of the third electronic switch and the first terminal of the fourth electronic switch are coupled together;

wherein the control terminals of the first, second, third and fourth electronic switches receive the first control signal, and when the first control signal is enabled, the first and third electronic switches conduct and the second and fourth electronic switches are turned off, and when the first control signal is disabled, the first and third electronic switches are turned off and the second and fourth electronic switches conduct.

[c11]

11. The switch control circuit according to claim 10, wherein the first electronic switch includes a first transmission gate, the fourth electronic switch includes a second transmission gate, and the first and second transmission gates receive a second control signal inverted to the first control signal.

[c12]

12. The switch control circuit according to claim 1, wherein the driving circuit is coupled to a second power supply lower than the first power supply.